



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,219	06/23/2006	Yasuhito Murata	10921.409USWO	9158
52835 7590 03/25/2010 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER				
EOM, ROBERT J				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
03/25/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/584,219

**Applicant(s)**

MURATA ET AL.

**Examiner**

ROBERT EOM

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed 12/08/2009 have been fully considered but they are not persuasive.

Regarding applicants' traversal of the 35 USC 102(b) rejection of claims 1-9, the applicants assert "Atwood does not disclose the measuring of the temperature of the sample block is performed at its heated cover", but rather at temperature sensor 21 (pp6/para7). Assuming arguendo, Atwood still discloses the monitoring of measurements from a temperature sensor (not show) disposed on the heated cover in order to control the resistance heaters disposed on the heated cover (C9/L46-52), which is analogous to the applicants' recited "seal" of the "container". Additionally, the applicants assert "Atwood does not disclose that the amount of heat energy applied to the sample is calculated based on both the temperature of the heated cover 14 and the ambient temperature measured by the sensor 56", more specifically, the applicants assert that Equations 3-5 fail to disclose a factor concerning a temperature measurement by the heater cover being considered (pp7/para2). However, Atwood does disclose compensating for any additional mass with an experimentally determined constant of proportionality, as cited in the Office Action submitted 06/08/2009. This constant is determined while factoring the measurements of the temperature sensor of the heated cover. Additionally, the heated cover is controlled with a PID controller, which provides feedback control of the resistance heaters. While the applicants emphasize the temperature control for the heated cover being separate from the sample

block, both control arrangements provide for the determination of the amount of heat energy necessary to raise the temperature of the samples contained within the sample block. It is the Examiner's position that Atwood's disclosed heated cover and sample block in combination is interpreted to be analogous to applicants' recited "container". As such, the applicant's remarks towards the 35 USC 102(b) rejections of claims 1-9 are not persuasive, and the rejection is maintained.

Regarding applicants' traversal of the 35 USC 102(b) rejections of claims 10-14, the applicants assert "Atwood does not anticipate, suggest or teach the measuring of ambient temperature around the container, and the subsequent determination based on the ambient temperature." (pp8/para2). However, the applicant recognizes that Atwood discloses the ambient temperature based measurement and control of heat energy to the sample block earlier in the above mentioned cited response (pp7/para2), therefore the applicant's remarks towards the 35 USC 102(b) rejections of claims 10-11 are not persuasive, and the rejection is maintained.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Atwood et al. (USP 5,475,610).

Regarding claims 1-14, Atwood discloses all of the claimed limitations with a thermal cycler for automatic performance of PCR with multi-zone heating (**Fig. 1, C25/L44-C26/L16**) where the heat applied is controlled by measuring the temperature of the sample block at its heated cover (**C9/L49-52**) and ambient air (**C25/L8**); estimating the temperature of the sample liquid based on the thermal time constant of the system (**C28, see: Equation 6**) and compensating for any additional mass with an experimentally determined constant of proportionality (**C27/L22-53**); determining the power needed to cause the block temperature to stay or move to the desired temperature (**C24-25, see: Equations 3-5**); and heating the sample for up to 20 seconds (**C60/L33**). (**Additionally see: C98-104, Block Temperature Control Program for specific heating cycle protocols**).

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT EOM whose telephone number is (571)270-7075. The examiner can normally be reached on Mon.-Thur., 9:00am-5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tony G Soohoo/  
Primary Examiner, Art Unit 1797

/R. E./  
Examiner, Art Unit 1797